0-2: Real Numbers

Natural Numbers:	1, 2, 3, …
Whole Numbers:	0, 1, 2, 3, …
Integers:	… -3, -2, -1, 0, 1, 2, 3, …

Rational Numbers: Every number in the previous three categories, as well as all fractions, decimals that end (such as 0.23) and decimals that repeat (such as $0.\overline{61}$).

Irrational Numbers: Non-perfect squares (such as $\sqrt{10}$) and π.
Basically, decimals that continue forever, without any pattern.

Real Numbers: All rational and irrational numbers.

Ex #1: Please name the set or sets of numbers that apply to each real number.

(a) 8

(b) $\frac{3}{7}$

(c) –2

(d) $\sqrt{25}$

(e) $3.\overline{14}$

(f) $\sqrt{24}$

Ex #2: Please order the following numbers from *least* to *greatest*.

(a) $\frac{3}{5}, -\frac{1}{5}, \frac{2}{5}, 0, -\frac{3}{5}$

(b) $\sqrt{2}, 0.\overline{8}, -0.7, \frac{3}{10}, -\sqrt{3}$

Ex #3: Please make a list of the first twelve perfect squares. Remember that a *perfect square* is defined as a *number times itself.*

Ex #4: Between which two Natural Numbers are the following square roots located?

For example, $\sqrt{6}$ is more than __2__, and less than __3__.

(a) $\sqrt{17}$ is more than _____, and less than _____.

(b) $\sqrt{40}$ is more than _____, and less than _____.

(c) $\sqrt{85.5}$ is more than _____, and less than _____.

(Hint: what perfect square is 80-something?)

Ex #5: Please simplify the following square roots.

(a) $\sqrt{1}$

(b) $\sqrt{64}$

(c) $\sqrt{.04}$

(d) $\sqrt{\frac{9}{25}}$